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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/960,282 | 09/24/2001 | Hiroshi Kondo | 862.C2390 | 4768 |

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| EXAMINER |
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MUTSCHLER, BRIAN L

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| ART UNIT | PAPER NUMBER |
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1753

DATE MAILED: 01/02/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/960,282

Applicant(s)

KONDO ET AL.

Examiner

Brian L. Mutschler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Comments

1. The rejection of claims 1-9 under 35 U.S.C. 112, second paragraph, has been overcome by Applicant's amendment.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simburger et al. (U.S. Pat. No. 6,300,158) in view of Weinberg (U.S. Pat. No. 6,262,558).

Simburger et al. disclose a solar battery comprising a solar cell array disposed on one side of a substrate and a power converter disposed on the opposite side of the substrate (col. 5, lines 10-15). The module is connected using a simple two wire bus (col. 3, lines 19-23). Simburger et al. further disclose connecting a plurality of solar cell power modules to form a solar cell array (col. 5, lines 22-29). Since the device of Simburger et al. uses a two wire bus and a plurality of devices can be used to form an array, the device would inherently have an input connector for collecting power from outside the device and an output connector for outputting the power.

The device of Simburger et al. differs from the instant invention because Simburger et al. do not disclose the use of a detector or a controller, as recited in claims 1-3, and a DC-DC converter, as recited in claim 7.

Weinberg discloses a solar battery having a plurality of solar cells. The device has a current detector **211** to detect the current from the solar cells (col. 10, line 51). The device further comprises a plurality of switches and a switch controller for controlling the switches to maintain the output of the solar cell array (col. 3, lines 31-41). The switches disconnect portions of the solar array to match the solar array power to the load (col. 3, line 45-48). Weinberg also discloses a DC-DC converter to convert the produced current into a current that is usable by the load (col. 2, line 23).

Regarding claims 1-3, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Simburger et al. to use a current detector and a controller as taught by Weinberg because a current detector and controller would allow the device to match the power of the solar battery with the power requirements of the load.

Regarding claim 7, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Simburger et al. to use a DC-DC converter as taught by Weinberg because a DC-DC converter allows the power generated by the solar cells to be converted into a more usable current for the load.

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4. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simburger et al. (U.S. Pat. No. 6,300,158) and Weinberg (U.S. Pat. No. 6,262,558), as applied above to claims 1-3, 7 and 8, and further in view of Uchihashi et al. (U.S. Pat. No. 5,951,785).

Simburger et al. and Weinberg describe a device having the limitations recited in claims 1-3, 7 and 8 of the instant invention, as described above in section 3.

The device of Simburger et al. and Weinberg differs from the instant invention because they do not disclose the use of a plug and receptacle connection means for the input and output connectors, as recited in claim 4, and an inverter for converting DC power to AC, as recited in claim 6.

Uchihashi et al. disclose a solar cell module having an integrated DC-AC inverter and plug **14** and receptacle connection means for connecting the modules (col. 1, lines 26-29; col. 6, lines 5-9).

Regarding claim 4, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device described by Simburger et al. and Weinberg to use a plug and receptacle connection means as taught by Uchihashi et al. because a plug and receptacle allows for easy installation of the solar cell modules.

Regarding claim 6, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device described by Simburger et al. and Weinberg to use an DC-AC inverter as taught by Uchihashi et al.

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because a DC-AC inverter would convert the DC power generated by the solar cells to AC power, a form of power used for many applications.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simburger et al. (U.S. Pat. No. 6,300,158) and Weinberg (U.S. Pat. No. 6,262,558), as applied above to claims 1-3, 7 and 8, and further in view of Cowan (U.S. Pat. No. 5,569,998).

Simburger et al. and Weinberg describe a device having the limitations recited in claims 1-3, 7 and 8 of the instant invention, as described above in section 3.

The device of Simburger et al. and Weinberg differs from the instant invention because they do not disclose the use of an indicator to indicate a control state of the power converter.

Cowan discloses a solar battery device comprising a DC-DC converter and an indicator **37** that provides an indication of the status of the power generator (col. 5, lines 1-2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device described by Simburger et al. and Weinberg to use an indicator as taught by Cowan because an indicator would allow the user to quickly ascertain the operating condition of the device.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simburger et al. (U.S. Pat. No. 6,300,158) and Weinberg (U.S. Pat. No. 6,262,558), as

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applied above to claims 1-3, 7 and 8, and further in view of Harris (U.S. Pat. No. 4,409,537).

Simburger et al. and Weinberg describe a device having the limitations recited in claims 1-3, 7 and 8 of the instant invention, as described above in section 3.

The device of Simburger et al. and Weinberg differs from the instant invention because they do not disclose connecting a plurality of the devices in a single-phase three-wire system.

Harris discloses a connection method for a plurality of solar cells wherein the solar cells are connected to a three-wire system (col. 1, line 59 to col. 2, line 15). The three-wire system "prevents a fault in one group of primary cells from inhibiting the normal operation of any other group in the power transmission system" (col. 2, lines 11-13).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device described by Simburger et al. and Weinberg to connect a plurality of devices using a three-wire system as taught by Harris because a three-wire system "prevents a fault in one group of primary cells from inhibiting the normal operation of any other group in the power transmission system" (col. 2, lines 11-13).

Response to Arguments

7. Applicant's arguments filed November 25, 2002 have been fully considered but they are not persuasive.

8. Applicant has argued the rejection of claims 1-9 under 35 U.S.C. 103 based on the rejection using Simburger et al. as the primary reference and Weinberg as the teaching reference. Regarding the rejection, Applicant has stated, "Weinberg merely refers to a controller for controlling switches...in accordance with a current value of a charging current (of a battery 3) detected by a current detector" (see page 4 of Applicant's response).

9. It is the Examiner's position that Weinberg teaches the structural elements that are not disclosed by Simburger et al. The current detector **211** is a current detector that detects the current output of the device, i.e., it would detect the current output of the output connector. The controller is used to control the output of the device. Since the controller is responsive to the output of the device, it would be able to function in the manner claimed by the instant invention. Furthermore, Weinberg teaches, "the invention can also be used in other solar array powered applications where a number of constant current sources needs to be controlled" (col. 4, lines 6-8).

10. In response to applicant's argument that the prior art does not teach or suggest a controller "that controls the output of a power converter when the current value exceeds a threshold based on maximum rated current value of the output connector or current path", a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the

prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

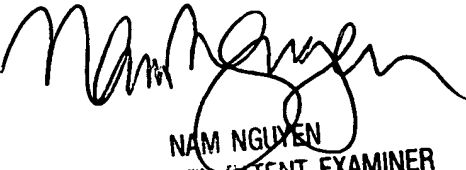
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian L. Mutschler whose telephone number is (703) 305-0180. The examiner can normally be reached on Monday-Friday from 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (703) 308-3322. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

blm
December 18, 2002



NAM NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700